

## Refine Search

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L8 and (hyperlink\$3 or hyper adj link\$3 or click\$ or icon\$3)	12

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L10

Refine Search

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### Search History

DATE: Wednesday, March 29, 2006   [Printable Copy](#)   [Create Case](#)

Set Name	Query	Hit Count	Set Name result set
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L10</u>	18 and (hyperlink\$3 or hyper adj link\$3 or click\$ or icon\$3)	12	<u>L10</u>
<u>L9</u>	18 and (hyperlink\$3 or hyper adj link\$3)	0	<u>L9</u>
<u>L8</u>	L7 and (fold\$6 or tree or hierach\$6 or order\$3)	40	<u>L8</u>
<u>L7</u>	L4 and (radiolog\$3 or x-ray) same (view\$6 or see\$4)	51	<u>L7</u>
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<u>L3</u>	(digit\$ or electronic\$3 or online)same (defin\$6 or determin\$6)same (graphic\$4 or gui) same (imag\$6 or picture or pictor\$3) same patient same (folder or fold\$6 or tree)	2	<u>L3</u>
<u>L2</u>	(digit\$ or electronic\$3 or online)same (defin\$6 or determin\$6)same (graphic\$4 or gui) same (imag\$6 or picture or pictor\$3) same patient same (folder or	1	<u>L2</u>

fold\$6 or tree) same (radiolog\$3 or x-ray) same (view\$6 or see\$4)

*DB=USPT; PLUR=YES; OP=ADJ*

L1 (6260049 OR 5513101).PN.

2 L1

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 12 of 12 returned.

☐ 1. Document ID: US 20050104896 A1

Using default format because multiple data bases are involved.

L10: Entry 1 of 12

File: PGPB

May 19, 2005

PGPUB-DOCUMENT-NUMBER: 20050104896

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050104896 A1

TITLE: Viewing device

PUBLICATION-DATE: May 19, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Kerr, Roger S.	Brockport	NY	US
Tredwell, Timothy J.	Fairport	NY	US
Narayan, Badhri	Rochester	NY	US
Ramanujan, Sujatha	Pittsford	NY	US
Donaldson, Eric J.	St. Paul	MN	US
Mohapatra, Sarat K.	Woodbury	MN	US

US-CL-CURRENT: 345/619

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw. D.
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☐ 2. Document ID: US 20040107118 A1

L10: Entry 2 of 12

File: PGPB

Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040107118

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040107118 A1

TITLE: Electronic clinical reference and education system and method of use

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw. D.
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☐ 3. Document ID: US 20040029068 A1

L10: Entry 3 of 12

File: PGPB

Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029068  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040029068 A1

TITLE: Method and system for integrated orthodontic treatment planning using unified workstation

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D.
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☐ 4. Document ID: US 20020063560 A1

L10: Entry 4 of 12

File: PGPB

May 30, 2002

PGPUB-DOCUMENT-NUMBER: 20020063560  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020063560 A1

TITLE: MR imaging system with interactive MR geometry prescription control over a network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D.
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☐ 5. Document ID: US 20020048741 A1

L10: Entry 5 of 12

File: PGPB

Apr 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020048741  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020048741 A1

TITLE: Methods for use in dental articulation

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D.
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☐ 6. Document ID: US 6492812 B1

L10: Entry 6 of 12

File: USPT

Dec 10, 2002

US-PAT-NO: 6492812  
DOCUMENT-IDENTIFIER: US 6492812 B1

TITLE: MR imaging system with interactive MR geometry prescription control over a network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. D.
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☐ 7. Document ID: US 6331776 B1

L10: Entry 7 of 12

File: USPT

Dec 18, 2001

US-PAT-NO: 6331776

DOCUMENT-IDENTIFIER: US 6331776 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: MR imaging system with interactive MR geometry prescription control over a network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw. De
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☐ 8. Document ID: US 6322359 B1

L10: Entry 8 of 12

File: USPT

Nov 27, 2001

US-PAT-NO: 6322359

DOCUMENT-IDENTIFIER: US 6322359 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Method for use in dental articulation

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw. De
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☐ 9. Document ID: US 6243095 B1

L10: Entry 9 of 12

File: USPT

Jun 5, 2001

US-PAT-NO: 6243095

DOCUMENT-IDENTIFIER: US 6243095 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Navigation and display system for digital radiographs

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw. De
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☐ 10. Document ID: US 6152731 A

L10: Entry 10 of 12

File: USPT

Nov 28, 2000

US-PAT-NO: 6152731

DOCUMENT-IDENTIFIER: US 6152731 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Methods for use in dental articulation

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw. De
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☐ 11. Document ID: US 5734915 A

L10: Entry 11 of 12

File: USPT

Mar 31, 1998

US-PAT-NO: 5734915

DOCUMENT-IDENTIFIER: US 5734915 A

TITLE: Method and apparatus for composing digital medical imagery

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 12. Document ID: US 5542003 A

L10: Entry 12 of 12

File: USPT

Jul 30, 1996

US-PAT-NO: 5542003

DOCUMENT-IDENTIFIER: US 5542003 A

TITLE: Method for maximizing fidelity and dynamic range for a region of interest within digitized medical image display

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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L8: Entry 23 of 40

File: USPT

Jun 5, 2001

DOCUMENT-IDENTIFIER: US 6243095 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Navigation and display system for digital radiographs

Abstract Text (1):

A navigation and display system for digital radiographs comprises one high definition monitor (or two) for viewing digitally acquired images, a video buffer for storing the images to be displayed, and a control console having a graphical user interface (GUI) for controlling the display of the images on the high definition monitor. By storing all of the images to be displayed for a patient study in the video buffer, the images can be selectively displayed in a seemingly instantaneous manner. The GUI displays multiple icons, where each icon represents one of the radiographic images for the patient study in question. A cursor on the GUI is coupled to a mouse, where movement of the mouse controls the location of the cursor with respect to the icons, and hence the image(s) displayed on the high definition monitor. The icons are arranged such that hand movements required to control the mouse correspond to head and eye movements made by radiologists when viewing similar images on hard copy film. The images displayed can include the radiographic images as originally captured, as well as various renditions thereof including renditions of different spatial resolutions and images processed to highlight radiographic features of interest.

Brief Summary Text (6):

Currently, mammograms are viewed on a multiviewer 100 (also known as a viewbox) as hard copy film, as shown in FIG. 1. Images from a current examination are hung on a lower level 102 of the multiviewer, and include a right cranial-caudal ("cc") view 104, a left cc view 106, a right oblique view 108, and a left oblique view 110. The same views from a prior comparison exam are hung on an upper level 112 of the multiviewer, and include a right cc view 104', a left cc view 106', a right oblique view 108', and a left oblique view 110'. In general, the images are viewed in a systematic order, and the current images are compared to the prior images to detect any changes. Thus, a mammographer reviewing the single patient study illustrated in FIG. 1 moves his head and eyes upwardly and downwardly to compare a set of views from the current and prior examinations, such as the right cc views 104, 104'. After conducting this comparison, the mammographer shifts his head and eyes from left to right to review the next view from the current examination, such as the left cc view 106, and then again shifts his head and eyes upwardly and downwardly to compare the left cc view 106 with the left cc view 106' from the prior examination. Other arrangements of the various views can be and sometimes are employed.

Brief Summary Text (9):

Prototype full-breast detector systems are now available for acquiring mammograms digitally so that the images are never recorded on film. Similar systems are available for digitizing radiographs, including mammograms, from films or slides. It is presently unclear, however, how high resolution, full field of view (FOV) digital mammograms will be read. Suggested approaches include printing the digital images on laser film for viewing, the development of monitors having 4k.times.4k or greater pixel matrices, and use of head-mounted displays currently under development by the intelligence and defense community. Given the cost consciousness

in the healthcare community, however, these approaches may be cost prohibitive or provide for insufficient radiologist productivity. Printing processed digital images on laser film merely compounds the high cost of film-screen radiographs with the high cost of digital receptor systems. Similarly, the high cost of monitors having 4k.times.4k pixel resolution, or head-mounted displays, can hardly be estimated at present, as such systems will be commercially unavailable for many years to come. Although digital workstations employing high definition ("HD") monitors with 1k.times.1k, or 2k.times.2k, pixel matrices have been proposed, a separate monitor is required for displaying each image in a patient study, again at a prohibitively high cost. In the case of digital mammography, a total of eight or more HD monitors would be required.

Brief Summary Text (11):

What is needed is a system and method for viewing digitally acquired radiographs without requiring presently unavailable, high cost, HD monitors having 4k.times.4k or greater pixel matrices, and at speeds that make effective use of radiologists' time. Such a system and method would preferably allow a radiologist to view images on only one currently available HD monitor (i.e., having a 1k.times.1k or 2k.times.2k pixel matrix), or two at most, so as to minimize system costs. The radiologist should be able to use such a system and method in an intuitive manner so that only minimal training would be necessary. Minimizing the cost and the complexity of use of such a system, while maximizing the speed at which the images can be viewed, would facilitate its clinical acceptance, thereby promoting the progress of digital radiography and its corresponding medical advantages.

Brief Summary Text (13):

The inventor hereof has succeeded at solving these and other needs by designing and developing a navigation and display system, and a corresponding method, for viewing digitally acquired radiographs using only a single HD monitor in a first embodiment, or only two HD monitors in a second embodiment. The system is configured such that a radiologist can navigate his way through the multiple images of a typical patient study (as well as various renditions thereof) in an intuitive manner, as the radiologist selectively controls the display of the images on the HD monitor using hand movements analogous to the head and eye movements made by a radiologist when reviewing radiographs on film-screens using a prior art multiviewer. Thus, the radiologist can be said to be trained as to how the inventor's system is used even before the radiologist is actually introduced to the system. Moreover, the system allows radiologists to review digitally acquired radiographs at speeds comparable to or greater than the speeds at which hard copy radiographs are typically reviewed. System costs are also controlled by use of only one or at most two HD monitors. Further, enabling efficient use of soft copy viewing helps to eliminate costs for film, film staging, film developing, and film storage, promotes remote viewing of images transmitted over digital networks, and allows the images to be stored on digital recording media.

Brief Summary Text (14):

The inventor's preferred system comprises a HD monitor for viewing digitally acquired images, a video buffer for storing the images to be displayed, and a control console having a graphical user interface (GUI) for controlling the display of the images on the HD monitor. By storing all of the images to be displayed for a patient study in the video buffer, the images can be selectively displayed in a seemingly instantaneous manner, as fetching of these images from disk are not required while the radiologist is reviewing the patient study. The video buffer can be of a size capable of storing more than two patient studies, or can instead be sized to store only two patient studies. In the latter case, the memory space used for storing the first patient study can be overwritten after the first patient study is reviewed, but while the second patient study is under review, so that a new, third patient study is available for review once the radiologist completes his review of the second patient study. Using this approach, the two memory spaces for storing two patient studies can be alternately updated such that a new patient



study is always timely available for review by the radiologist.

Brief Summary Text (17):

The icons are arranged on the GUI in the same fashion that the views which they represent are typically hung on a prior art multiviewer when hard copy display is performed. Thus, if a first standard view is typically hung on a multiviewer immediately next to a second standard view such that a radiologist looks at the first standard view, and then moves his head and eyes sideways to look at the second standard view, then icons representing these views are similarly arranged on the GUI one immediately next to the other. As a result, the hand movements made by the radiologist to control the display of the images on the HD monitor with the mouse are highly analogous to the head and eye movements that must be made to review these images on hard copy film. In this way, the method by which the system is used is intuitive to radiologists, so that only minimal, if any, training is required, and so the system can be used to review radiographic images at speeds equal to or greater than the speeds at which hard copy films are typically reviewed. The radiologist will seldom have to look at the GUI for orientation, and can instead focus his attention on the one or two HD monitors upon which the images are displayed.

Detailed Description Text (14):

If the arrow is initially displayed near the top center region of the GUI, then when the system operator (i.e., a radiologist) moves the mouse towards him and to the left, the arrow on the GUI moves into the box enclosing the new cc views, as shown in FIG. 4. In the 1k mode, the position of the arrow relative to the icons has no bearing on the images displayed on the HD monitor 202. However, clicking on the left mouse button switches the system into the 2k display mode, and with the arrow positioned as shown in FIG. 4, the new cc views will be displayed on the HD monitor 202 at 100 micron resolution, as shown in FIG. 6. When the radiologist moves the mouse away from himself, the cursor on the GUI moves from the box enclosing the new cc views into the box enclosing the old cc views, as shown in FIG. 7. Consequently, the cc views of the prior examination are displayed on the HD monitor 202 at 100 micron resolution, as shown in FIG. 8.

Detailed Description Text (15):

By moving the mouse towards and away from himself, the radiologist can toggle the image displayed on the monitor 202 between the new cc views (FIG. 6) and the prior cc views (FIG. 8) at 100 micron resolution. These hand movements by the radiologist correspond to the head and eye movements previously performed by the radiologist when comparing the new cc views 104, 106 with the old cc views 104', 106' on hard copy film as shown in FIG. 1.

Detailed Description Text (16):

With the system still in the 2k display mode, the radiologist can move his hand from left to right to move the arrow on the GUI from the box enclosing the new cc views into the box enclosing the new oblique views as shown in FIG. 9, thereby causing the left and right oblique views from the current examination to be displayed on the monitor 202 at 100 micron resolution, as shown in FIG. 10. Moving the mouse away from the radiologist causes the arrow on the GUI to move into thus box enclosing the old oblique views, thereby calling up the left and right oblique views from the prior examination on the monitor 202 at 100 micron resolution, as shown in FIG. 11.

Detailed Description Text (19):

Although not shown in the figures, moving the cursor to the top portion of the icon for the right cc view of the current examination causes the window to move up and enclose approximately the top half of the icon for the right cc image of the current examination. This, in turn, causes the enclosed portion of the right cc image to be displayed on the HD monitor 202 at 50 micron resolution. Thus, for each of the eight icons, there are three positions for the window displayed on the GUI

when the system is in the 4k mode: the top half of the icon, the middle of the icon, and the bottom half of the icon. Note that portions of the image displayed with the window positioned, for example, on the bottom half of the icon are also displayed when the window is positioned about the center of the icon. In other words, the center position for the window overlaps with the top and bottom positions of the window so that features of the displayed image that are located at the boundary of one window position are not similarly positioned at the boundary of a different window position. Thus, the radiologist is less likely to overlook such features due to this overlapping approach to windowing.

#### CLAIMS:

1. A method for rapidly selecting and displaying multiple, separate radiologic images on a computer system having a monitor by selectively controlling the transfer of images from a computer memory to the monitor using hand movements substantially corresponding to head and eye movements employed by a user when viewing the multiple separate images on hard copy film as viewed on a multi-viewer, the method including selectively displaying the multiple images on the monitor, the images being multiple, separate images acquired from at least one radiologic examination of a specific patient displaying the images in a defined pattern on the monitor corresponding to the accepted radiologic format in which the images are displayed on the multiviewer, and navigating between images displayed on the monitor by using hand movements to control an input device to recall images from computer memory in a pattern that is the same as said defined, with the pattern which the use would use head and eye movements to navigate between the hardcopy films displayed on the multiviewer, the images or portions of the images being selectively available in at least one rendition with the method facilitating navigation through the images regardless of the number of renditions displayed.

12. A method for rapidly selecting and displaying multiple, separate radiologic images on a computer system having a monitor by selectively controlling the transfer of images from a computer memory to the monitor using hand movements substantially corresponding to head and eye movements employed by a user when viewing the multiple, separate images on hard copy film as viewed on a multi-viewer, the method including selectively displaying the multiple images on the monitor, the images being multiple, separate images acquired from at least one radiologic examination of a specific patient, displaying the images in a defined pattern on the monitor corresponding to the accepted radiologic format in which the images are displayed on the multiviewer, and navigating between the images displayed on the monitor by selecting at least a portion of an icon using hand movements in a manner corresponding to that by which the user would navigate between the hard copy film displayed on the multiviewer using head and eye movement, the images being selectively available in different degrees of resolution with the method facilitating navigation through the images regardless of the degree of resolution of the image displayed.

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